

## **REMARKS**

In the outstanding Office Action, the Examiner rejected claims 1-3, 5-9, 12-14, 16-19, 21, 24, 26, 35, 36, and 40. In addition, the Examiner objected to claims 4, 10, 11, 15, 20, 22, 23, 25, 27-34, and 37-39. Applicants wish to thank the Examiner for indicating that claims 41-48 are allowed and that claims 4, 10, 11, 15, 20, 22, 23, 25, 27-34, and 37-39 would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims. By this amendment, Applicants cancel claims 2, 14, and 15, without prejudice or disclaimer, amend claims 1, 4, 5, 8-10, 13, 17, 19, 24, 27, 29-30, 40, and 41, and add new claims 49-77. With entry of this amendment, claims 1, 3-13 and 16-77 are pending and under consideration.

### **Rejections under 35 U.S.C. §§ 102(b) and (e)**

The Examiner rejected claims 1-3, 5, 6, 8, 9, 16-18, and 40 under 35 U.S.C. § 102(e) as allegedly being anticipated by WO 00/23841 to Yamamoto ("Yamamoto"). Office Action at page 2.

Initially, Applicants note that a U.S. patent has issued (i.e., U.S. Pat. No. 6,721,259) that was based on Yamamoto ("the '259 patent"). Since the disclosure of the '259 patent is written in English, Applicants hereby cite the '259 patent in a concurrently-filed Information Disclosure Statement ("IDS"). Applicants believe the disclosure of the '259 patent is substantially equivalent to Yamamoto. Therefore, Applicants will cite from the disclosure of the '259 patent in addition to any citation to Yamamoto.

The Examiner stated:

"The reference shows an optical disk reading apparatus comprising: . . . a converging means for focusing the light beam into a disk 16, 20, 15, 14, 21 and 1, . . . wherein the converging means having a at least a plastic lens for spherical correction as shown in element 21. With respect to the limitations of claims 2 and 3 see element 21."

Office Action at page 2.

Applicants respectfully traverse this rejection. Amended claim 1 recites, in part:

[a]n optical pickup apparatus . . . comprising: . . .  
a converging optical system . . . ,  
wherein the converging optical system  
comprises at least a plastic lens and a spherical  
aberration deviation correcting element . . . ,  
wherein the spherical aberration deviation  
correcting element comprises a movable element  
movable in a direction of an optical axis and  
wherein the movable element of the spherical  
aberration deviation correcting element is moved so  
as to correct **a spherical aberration deviation** in the  
objective optical system **which comes from a  
refractive index variation according to a  
temperature variation** in the plastic lens.

(Emphasis added.)

Applicants respectfully assert that Yamamoto does not teach or suggest the subject matter recited by claim 1.

In contrast, Yamamoto discloses an optical head having an objective lens composed of two or more of lenses and an aberration correcting lens group, that corrects "**a spherical aberration due to the manufactur[ing] errors**" of either an optical recording medium or the lenses of the objective lens. See, Yamamoto abstract, and the '259 patent abstract and col. 2, line 67 to col. 3, line 10 (emphasis added). The

Yamamoto invention further corrects the **chromatic** aberration resulting from the use of a short-wave semiconductor laser and the **spherical aberration that occurs when an identical optical system is used for beams having different wavelengths**. See, *id.* (emphasis added). In other words, Yamamoto discloses that the spherical aberration deviation correcting element corrects the **spherical** aberration deviations resulting from **manufacturing errors** and/or the use of light beams having **different wavelengths**.

However, correcting a spherical aberration deviation due to manufacturing errors and/or the use of light beams having different wavelengths cannot be said to teach or suggest correcting “a spherical aberration deviation . . . which comes from **a refractive index variation according to a temperature variation**.” See, e.g., claim 1, as amended (emphasis added). Indeed, the ‘259 patent does not discuss temperature at all. Thus, Yamamoto does not teach or suggest that “the movable element of the spherical aberration deviation correcting element is moved so as to correct a spherical aberration deviation . . . which comes from **a refractive index variation according to a temperature variation**,” as recited by claim 1, as amended (emphasis added).

Therefore, Applicants respectfully submit that the rejection of claim 1 under Yamamoto should be withdrawn for at least the above reason.

Claim 40 is similarly amended so that the same arguments above that apply to claim 1 similarly apply to claim 40. Therefore, Applicants respectfully submit that the rejection of claim 40 under Yamamoto should be withdrawn for at least the above reason.

The Examiner rejected claims 1, 2, 3, 5-7, 36, and 40 under 35 U.S.C. § 102(b) as allegedly being anticipated by United States Patent No. 6,049,519 to Arai ("Arai").

Office Action at pages 2 and 3.

The Examiner stated:

"[t]he reference shows the use of an optical disk reading apparatus comprising . . . a converging means having a first and second lenses for spherical correction 13 and 16. "

Office Action at page 3.

Applicants respectfully traverse this rejection. Amended claim 1 recites, in part:

[a]n optical pickup apparatus . . . comprising: . . .  
a converging optical system . . . ,  
wherein the converging optical system comprises at least a plastic lens and a spherical aberration deviation correcting element . . . ,  
wherein the spherical aberration deviation correcting element comprises a movable element movable in a direction of an optical axis and  
wherein ***the movable element of the spherical aberration deviation correcting element is moved so as to correct a spherical aberration deviation in the objective optical system which comes from a refractive index variation according to a temperature variation*** in the plastic lens.

(Emphasis added.)

Applicants respectfully assert that Arai does not teach or suggest the subject matter recited by claim 1. In contrast, Arai discloses that

[e]ach of FIGS. 61 and 62 shows the structure of a pickup device for optical information which ***switches between the convergence*** on the recording surface 278 of the optical information recording medium having ***0.6 mm-thick transparent substrate*** 27 (FIG. 61) and ***the convergence*** on the recording surface 288 of the optical information recording medium

having **1.2 mm-thick transparent substrate 28** (FIG. 62), **by moving the first lens group 13** in the optical axis direction, as shown in FIGS. 56(a) and 56(b).

Column 45, line 61 - Column 46, line 2 (emphasis added).

In other words, Arai discloses that the movable element of the spherical aberration deviation correcting element is moved to correct a spherical aberration deviation **due to a change in the thickness of the transparent substrate of the recording medium** (e.g., between a 0.6 mm-thick transparent substrate and a 1.2 mm-thick transparent substrate). See also, e.g., Figs. 61 and 62. However, moving an element to correct a spherical aberration deviation due to a change in the thickness of the recording medium cannot be said to teach or suggest correcting “a spherical aberration deviation . . . **which comes from a refractive index variation according to a temperature variation,**” as recited by claim 1, as amended (emphasis added). Thus, Arai does not teach or suggest that “the movable element of the spherical aberration deviation correcting element is moved so as to correct a spherical aberration deviation . . . **which comes from a refractive index variation according to a temperature variation,**” as recited by amended claim 1 (emphasis added).

Therefore, Applicants respectfully submit that the rejection of claim 1 under Arai should be withdrawn for at least the above reason.

Claim 40 is similarly amended so that the same arguments above that apply to claim 1 similarly apply to claim 40. Therefore, Applicants respectfully submit that the rejection of claim 40 under Arai should be withdrawn for at least the above reason.

The Examiner rejected claims 1, 2, 12, 13, 16, 19, 21, 24, 26, 35, 36, and 40 under 35 U.S.C. § 102(e) as allegedly being anticipated by United States Patent No. 6,191,889 to Maruyama ("Maruyama"). Office Action at page 3.

The Examiner stated:

"The reference shows an optical disk reading apparatus comprising: . . . a converging element D, 10-12 for spherical correction of the light beam. With respect to the limitation of claim 2. the reference shows the use of an objective lens 10 movable in the focusing direction."

Office Action at page 3.

Applicants respectfully traverse this rejection. Amended claim 1 recites, in part:

[a]n optical pickup apparatus . . . comprising:  
a converging optical system . . . ,  
wherein the converging optical system  
comprises at least a plastic lens and a spherical  
aberration deviation correcting element . . . ,  
wherein the spherical aberration deviation  
correcting element comprises a movable element  
movable in a direction of an optical axis and  
wherein ***the movable element of the  
spherical aberration deviation correcting element  
is moved so as to correct a spherical aberration  
deviation*** in the objective optical system ***which  
comes from a refractive index variation according  
to a temperature variation*** in the plastic lens.

(Emphasis added.)

Applicants respectfully assert that Maruyama does not teach or suggest the subject matter recited by claim 1. In contrast, Maruyama discloses that "the changes of the spherical aberrations caused by the refractive lens and the diffractive grating can . . . counterbalance . . . each other." Column 2, lines 15-17 and column 4, lines 56-58. In other words, Maruyama discloses that ***the diffractive grating corrects for a spherical***

aberration deviation through a compensation effect. See, e.g., column 5, lines 31-46. However, Maruyama does not teach or suggest that “the **movable element** of the spherical aberration deviation correcting element **is moved so as to correct** a spherical aberration,” as recited by claim 1, as amended (emphasis added).

Further, without a specific citation, the Examiner mentioned that “the reference shows the use of **an objective lens** 10 movable in the focusing direction.” At best, Maruyama teaches that the focus adjusting mechanism of the optical pick-up can facilitate the best focus position of the light flux onto the recording medium. See, e.g., column 9, lines 1-3. However, movement of an objective lens to correct the focus of the light flux cannot be said to teach or suggest that “the movable element of the spherical aberration deviation correcting element is moved so as to correct a spherical aberration deviation,” as recited by claim 1, as amended.

Therefore, Applicants respectfully submit that the rejection of claim 1 under Maruyama should be withdrawn for at least the above reasons.

Claim 40 is similarly amended so that the same arguments above that apply to claim 1 similarly apply to claim 40. Therefore, Applicants respectfully submit that the rejection of claim 40 under Maruyama should be withdrawn for at least the above reasons.

The Examiner rejected claims 1, 14, 16, 24, 26, 35, 36, and 40 under 35 U.S.C. § 102(e) as allegedly being anticipated by United States Patent No. 6,317,276 to Braat (“Braat”). Office Action at pages 3 and 4.

The Examiner stated:

“The reference shows an optical disk reproducing apparatus comprising . . . a converging element having at least first and second lenses 10, 31 and 32 for spherical correction.”

Office Action at page 3.

Applicants respectfully traverse this rejection. Amended claim 1 recites, in part:

[a]n optical pickup apparatus . . . comprising: . . .  
a converging optical system . . . ,  
wherein the converging optical system comprises at least a plastic lens and a spherical aberration deviation correcting element . . . ,  
wherein the spherical aberration deviation correcting element comprises a movable element movable in a direction of an optical axis and  
wherein ***the movable element of the spherical aberration deviation correcting element is moved so as to correct a spherical aberration deviation*** in the objective optical system which comes from a refractive index variation according to a temperature variation in the plastic lens.

(Emphasis added.)

Applicants respectfully assert that Braat does not teach or suggest the subject matter recited by claim 1. In contrast, the positive synthetic material lens element 31 and the negative glass lens element 31 (which the Examiner apparently considers to correspond to the spherical aberration deviation correcting element) of Braat are stationary elements and ***do not move***. In other words, Braat does not teach or suggest that “the ***movable element*** of the spherical aberration deviation correcting element is moved so as to correct a spherical aberration” as recited by claim 1, as amended (emphasis added).

Therefore, Applicants respectfully submit that the rejection of claim 1 under Braat should be withdrawn for at least the above reason.



Claim 40 is similarly amended so that the same arguments above that apply to claim 1 similarly apply to claim 40. Therefore, Applicants respectfully submit that the rejection of claim 40 under Braat should be withdrawn for at least the above reason.

In addition, claims 3-13 and 16-39 directly or indirectly depend from claim 1. Therefore, Applicants respectfully assert that the Examiner's rejection of claims 3, 5-9, 12-13, 16-19, 21, 24, 26, 35 and 36 and objection of claims 4, 10, 11, 15, 20, 22, 23, 25, 27-34 and 37-39 should be withdrawn for at least the same reason as for claim 1.

Applicants amend claims 4, 5, 8-10, 13, 17, 19, 23-25, 27, 29-30 and 41. These amendments correct minor informalities in the as-filed claims, add no new matter, and do not affect the substance of the disclosure or the scope of the claims.

**Objected to Claims 4, 10, 15, 20, 22, 23, 25, 27, and 37-39 and New Claims 49-51 and 70-77**

The Examiner objected to, *inter alia*, claims 4, 10, 15, 20, 22, 23, 25, 27, and 37-39 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Office Action at page 4. In response, Applicants add new claims 49-51 and 70-77. Specifically, claims 49-51 and 70-77 rewrite claims 4, 10, 15, 20, 22, 23, 25, 27, and 37-39, respectively, in independent form, including all of the elements of any intervening claims. In addition, new claim 52 depends directly from claim 51. Applicants respectfully submit that new claims 49-52 and 70-77 are allowable over the cited art.

### **New Claims 53-64 and 67-69**

The Examiner also objected to claims 20, 22, 23, 25, 27-34, and 37-39 as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Office Action at page 4. In response, Applicants add new claims 53-64 and 67-69. Specifically, claims 53-64 and 67-69 rewrite claims 20, 22, 23, 25, 27-34, and 37-39 in independent form, including all of the elements of any intervening claims. Additionally, claims 53-64 and 67-69 include the elements of canceled claim 2. Applicants respectfully submit that, for the reasons stated by the Examiner, claims 53-64 and 67-69 are allowable over the cited art.

### **New Claims 65 and 66**

By this amendment, Applicants add new claims 65 and 66. Specifically, claim 65 represents claim 35 rewritten in independent form to include the elements of both claims 1 and 2. Similarly, claim 66 represents claim 36 rewritten in independent form to include the elements of both claims 1 and 2. Applicants respectfully submit that these claims are allowable over the cited art for the reasons argued above with respect to claim 1. In other words, Applicants argue that if claim 1 is deemed allowable, then both claims 65 and 66 are allowable as dependent claims therefrom.

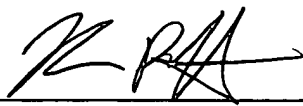
Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extension of time required to enter this response and charge any additional required fees to Deposit Account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
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Dated: September 27, 2004

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Linda Phillips